

REMARKS

Applicant respectfully requests reconsideration of this application. Claims 1-29 are pending. Claims 1, 4, 7, 13, 15, 19, and 25 have been amended. No claims have been canceled or added. A Request for Continued Examination (RCE) under 37 C.F.R. §1.114 accompanies the current response.

In the Office Action, claims 19-24 have been rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. Applicant has amended the preamble of claim 19 to recite a “computer-readable medium encoded with a computer program having computer executable instructions for causing a processor to perform operations to determine relative movement of a pixel block from a first video frame to a second video frame.” It is respectfully submitted that such a computer-readable medium encoded with a computer program having computer executable instructions falls within statutory subject matter under § 101. Claims 20-24 depend from claim 19, and thus, are also directed to such a computer-readable medium. Applicant respectfully requests withdrawal of the rejection.

Claims 1-29 have been rejected under 35 U.S.C. §102(b) as being anticipated by Hanami (US 6,122,317). Applicant respectfully traverses the rejection.

Claim 1 as amended sets forth:

a motion measurement on a plurality of motion search points that form a rectangular search region, ***each of the plurality of motion search points corresponding to a pixel block***, wherein a minimal motion search point among the plurality of motion search points is found based on result of the motion measurement, and

a refinement motion search on a sub-pixel level if the minimal motion search point is within an inner region of the rectangular search region; and

(Claim 1 as amended; emphasis added)

In contrast, Hanami fails to disclose at least the above limitation. According to Hanami, a search area 61 is split as to radially arrange square areas 170, 171, 172, 173, 174 and 175 with an evaluation point 162 indicated by a central vector centered. In this case, offset values of the areas 170 to 175 are increased as the areas 170 to 175 are increased in the distance from the evaluation point 162 indicated by the central vector. Due to this offset value distribution, there is a high possibility that an optimum vector is detected in the area 170, and variation of motion vectors can be suppressed in response. (Hanami, col. 38, ln. 17-28) In other words, Hanami merely discloses that the offset values of the radially arranged square areas increase as the areas 170 to 175 are increased in distance from the evaluation point 162. Hanami does not disclose **a refinement motion search on a sub-pixel level**. Therefore, Hanami fails to anticipate claim 1 as amended.

Furthermore, Hanami merely discloses the above radially arranged square areas 170-175 as an exemplary offset value distribution in the compare circuit 50 shown in Figure 58 of Hanami (Hanami, col. 38, ln.17-18). Hanami does not disclose performing a refinement motion search using the radially arranged square areas 170-175 **if the minimal motion search point is within an inner region of the rectangular search region**. Thus, Hanami fails to anticipate claim 1 as amended for this reason as well.

In addition to, or as an alternative to, the above reason, Hanami fails to anticipate claim 1 for the following reason. Claim 1 sets forth:

..., wherein a **minimal motion search point** among the plurality of motion search points is **found based on result of the motion measurement**;

(Claim 1 as amended; emphasis added)

In contrast, Hanami fails to disclose at least the above limitation. However, the Office Action alleged that a “search region definitely has a minimal search point to initiate the search for the optimum motion vector(s)” (Office Action, p. 3, lines 8-10). Applicant respectfully submits that the above allegation is irrelevant to the claim limitation at issue. Claim 1 does not recite a minimal search point to initiate the search for the optimum motion vectors. Rather, claim 1 teaches a minimal motion search point found based on result of the motion measurement. Furthermore, Hanami merely discloses selecting motion vectors of **high** priority levels as the optimum vectors (Hanami, col. 11, lines 45-48). An **optimum** motion vector is distinct and separate from a **minimal** motion search point. According to Hanami, candidate motion vectors of **high priority levels** are decided as optimum vectors using the motion vector detector shown in Figure 1 (Hanami, col. 11, lines 45-48). Thus, Hanami does not disclose a minimal motion search point. For at least the above reason, Hanami fails to anticipate claim 1 as amended. Withdrawal of the rejection is respectfully requested.

Claims 4, 7, 15, 19, and 25 are not anticipated by Hanami for at least the reasons discussed above with respect to claim 1. Withdrawal of the rejection is respectfully requested.

Claims 2-3, 5-6, 8-14, 16-18, 20-24, and 26-29 depend, directly or indirectly, from claims 1, 4, 7, 15, 19, and 25, respectively, and thus, include every limitation set forth in their respective base claims. Thus, claims 2-3, 5-6, 8-14, 16-18, 20-24, and 26-29 are not anticipated by Hanami for at least the reason discussed above with respect to claim 1. Withdrawal of the rejection is respectfully requested.

Furthermore, claim 8 is not anticipated by Hanami for the following reason as well.

Claim 8 sets forth:

repositioning the rectangular search region to be substantially centered on the minimal motion search point and partially overlapping a previous position of the rectangular search region ***while maintaining a size of the rectangular search region to be***

substantially the same if the minimal motion search point is along an edge or at a corner of the rectangular search region, the repositioned rectangular search region including a second plurality of motion search points;
(Claim 8 as amended; emphasis added)

In contrast, Hanami fails to disclose the above limitation. However, the Office Action argued that Hanami discloses the search area or window can be shifted or repositioned in that search block 42c is arranged on the lowermost area of the search window, implicating the search point can be substantially along the edge or at the corner of the rectangular search region (Office Action, p. 4, ln. 8-11; citing Hanami, col. 18, ln. 34-47). The Office Action further argued that Hanami discloses that the search area can be widened or repositioned to substantially adjust the dimensions for optimally ascertaining the best motion vector value data (Office Action, p. 4, ln. 15-17; citing Hanami, col. 12, ln. 38-43). Applicant respectfully disagrees with the Office Action.

Hanami merely discloses that an optimum predictive image can be detected by ***widening the search area*** (Hanami, col. 12, ln. 40-43), not ***repositioning*** the search region. Moreover, widening the search area would inevitably *change the size* of the search area in Hanami. In contrast, claim 8 as amended teaches “repositioning the rectangular search region ... while ***maintaining a size of the rectangular search region to be substantially the same.***” Thus, claim 8 as amended is patentably distinguishable from Hanami on this aspect.

Furthermore, the widening in Hanami is not done ***if*** the minimal motion search point is along an edge or at a corner of the rectangular search region. Even though the Office Action argued that Hanami implied that the search point can be along the edge or at the corner of the search region, the Office Action does not indicate where in Hanami is *a causal relationship* between the widening of the search area and the search point being along the edge or at the corner is disclosed. In contrast, claim 8 sets forth a causal relationship between repositioning the

search region and the minimal search point being along an edge or at a corner of the search region by reciting: “repositioning the rectangular search region ... *if* the minimal motion search point is along an edge or at a corner of the rectangular search region.” Therefore, Hanami fails to anticipate claim 8 for the above reason as well. Withdrawal of the rejection is respectfully requested.

Claims 16, 20, and 26 are also not anticipated by Hanami for the reasons discussed above with respect to claim 8. Withdrawal of the rejection is respectfully requested.


Applicant respectfully submits that the present application is in condition for allowance. If the Examiner perceives any further obstacle in allowing the present application, the Examiner is invited to call the Applicant's attorney, C. Teresa Wong at (408) 720-8300 before taking any action on the present application.

Pursuant to 37 C.F.R. 1.136(a)(3), Applicant hereby requests and authorizes the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 02-2666.

Respectfully submitted,

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